

**ABSTRACT**

Methods for repair of single crystal superalloys by laser welding and products thereof have been disclosed. The laser welding process may be hand held or automated. Laser types  
5 include: CO<sub>2</sub>, Nd:YAG, diode and fiber lasers. Parameters for operating the laser process are disclosed. Filler materials, which may be either wire or powder superalloys are used to weld at least one portion of a single crystal superalloy substrate.